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Irrigation from Artesian Wells.

Among the most interesting investigations now being conducted by our Government is that into the presence of water underneath the Western plains. It is a unique field of inquiry, and its results from both a scientific and a practical standpoint are likely to be of considerable importance. It was prompted by the query whether it were not possible to reclaim large sections of arid land by means of water from artesian wells, and, while other interesting facts have been developed, that is the one most emphasized in the lengthy Government report now ready for distribution. The volume contains 400 pages, and has returns from the Dakotas, Nebraska, Kansas, Texas, New Mexico, Nevada, Utah, Colorado and Wyoming. In Dakota a large basin has been found to exist about 400 miles long by 40 or 50 miles in width along the James River, and has been given its name. Its eastern boundary is marked by the watershed between the Red river of the North and the James, and it extends thence 50 miles or more west. It is pronounced the largest and strongest artesian basin yet discovered in this country. The water is found in a great bed of white sand, which is thrown out in large quantities by the wells where they are allowed to flow freely. In Kansas there are large areas where the water does not rise to the surface, although an abundant supply is obtainable by pumping. The same is true of many sections in Texas, Colorado, and other States. In all such areas it is suggested that the wind shall be utilized to raise the water, and the use of the windmill is recommended. This is doubtless in a measure practical. As Engineer Von Deist, of Colorado, remarks: "The plains of eastern Colorado and New Mexico could be dotted over with windmills to keep the water on the land just as the 'polders' in Holland are dotted with windmills to keep the water from the land." It is manifest, however, that sections where the water for irrigation must be raised in this way will only be taken up when the pressure of population is vastly greater than at the present time. One of the most remarkable developments noted in the report is that of the San Luis Valley, in Colorado. Within the past year 2,000 flowing wells have been sunk within an area of 16,000 square miles—two-fifths that of Ohio—water being reached at depths of from 60 to 1,000 feet, depending on whether the well is near the edge of the basin or its center. About 12,000 acres have been irrigated during the past season from these wells, and no diminution in the flow has been perceived. This is in some respects an ideal basin, surrounded, as it is, by lofty mountains, whose sides next the basin are precipitous and where the pitch of the strata is such that vast quantities of water are carried down into the valley underground. In Utah 2,000 wells have been sunk in the Salt and Utah lakes region. About 10,000 acres of arid land has been reclaimed by the water from these wells, and no diminution in pressure has yet occurred. Nevada has 67 flowing wells, and they have proven so valuable that the board of reclamation commissioners of that State claim that not less than 6,000,000 acres of now arid land can be rendered fertile by artesian wells—in other words, an area one-fourth that of Ohio. This is doubtless exaggerated somewhat, but it seems likely that in both Utah and Nevada considerable areas can be readily reclaimed in this way, as the physical configuration promises much for the idea. In Texas some 700 flowing wells are reported, but this number is scattered over such a vast area that few deductions can be made from the facts observed.—Cleveland Leader.

Why Railway Building is Dull.

The returns of gross and net earnings of the railways during the past year show that other influences are at work beside too great existing mileage to check the increase of new railways. The chief of these is the difficulty in maintaining rates at a profitable standard. The Financial Chronicle in a statement covering the gross and net earnings of one hundred and sixteen roads, shows an increase in gross earnings of \$14,000,000 over 1889, while the increase in net earnings is but \$8,000,000, a gain in gross earnings of upward of 8 per cent and in net earnings of only 4 per cent. In other words, the natural growth in business has been large, as was to be expected, but the interminable railway wars have reduced rates below the profitable point. If the roads already built are compelled to do a constantly increasing business at a constantly decreasing rate either from too much competition or because of unfriendly State or National legislation, investors will be slow to engage in new railway enterprises, especially as new railways will tend to still further decrease profits by increasing competition. As things look at present the railways, instead of growing up with the country, are likely to wait awhile for the country to grow up with the railroads. This will not prove an unmixed evil. The United States are already better supplied with railways than any other country in the world. Railway management is in a very chaotic state, however, and while new railway enterprises wait, perhaps the managers of existing railways may learn how to carry on their lines with due regard both for the rights of the public and the interests of the stockholders. Cut-throat wars will not furnish living profits for the stockholders, and exorbitant local rates will not tend to increase the friendliness of the public toward the railways.—Philadelphia Times.

A mysterious shooting occurred in Perez' saloon, East Tempe, at an early hour Sunday morning. "Doc" Dines, one of Daggs Bros. sheep herders, and a man named Wall were asleep in chairs, when suddenly the report of a pistol startled the bystanders and Wall rolled out of his chair with a shot in his back. The shot came it is supposed from Dine's pistol, but whether it was accidental or not no one seems to know. There are several stories afloat; something definite will probably be developed at the examination of Dines on Monday. He has been arrested and is held under \$1,000 bond. Wall is in a critical condition and no hope is expressed for his recovery.—Tempe News.

A colored gentleman has been rounded up upon the charge of selling whiskey, and is now here to answer to the United States authorities for the commission of the offense of affording San Carlos Agency Indians the opportunity of becoming "rip staving drunk." Is it any wonder that "the ardent" is smuggled in upon forbidden territory when Indians pay more than the Dutchman's one per cent for it? And in order that the supply shall not be cut off the vendee seldom blows on the vendor. The risk attending its introduction has raised the price from \$3 to \$5 per bottle.—Silver Belt.

On Monday Constables Elder and Gallardo arrested a Mexican by the name of Ventura Sota on the charge of having robbed Ah Yum, a Chinese vegetable peddler, of \$140.45, a pocket knife, revolver and three sacks of tobacco. A search of the hut revealed the pistol but the money could not be found. He was tried before Judge Jenkins and sentenced to the county jail to await the action of the grand jury.—Tempe News.

What is It?

Antonio Preciado, a noted Mexican prospector, who is constantly on the look out for mines that have been worked by what are termed the pre-historic people of the Santa Cruz valley, made a discovery near this city that seems hard to determine what it is. He had been prospecting in the Tucson mountains for a number of days, and some two weeks ago, on his way home, he came across on the hill side, some fifty steps from the end of Stevens avenue a singular looking place which at once attracted his attention. He saw on close inspection, that he was standing on top of what was at one time a circular shaft, between fifteen and twenty feet in diameter, and walled with stone and mortar. He struck his pick and then his crow bar, into the center of the walled place and found that his pick went down to the hilt, and his crow bar almost disappeared. It was growing late and marking the spot, he came on to town, and that night he dreamed of untold treasures that he had found in that place. Early the next morning, he went back, taking with him his pick and shovel. He began to dig, and soon found that a few inches from the top the dirt was loose and easily dug, and in no time had cleared away about two feet of dirt. He discovered, further, in digging, that a pair of stairs built out of hewn stone, led down the shaft, or walled place, and up to yesterday, though he had gone down some thirty feet, he had not reached the bottom, and the stairs continued to lead down. The work has been carried on by Preciado alone for the last two weeks, and had never told any one of his discovery till yesterday.

Bernabe Britchta was the first man to receive the news of this strange discovery, and having gone out there yesterday, he kindly gave the above facts to the Star reporter. Now, what is it? Is it the way into one of those pre-historic mines, or is it a furnace? Certainly a mine, for in digging several pieces of quartz rock and iron ore have been found, also indications of a dirt leading towards the center of the mountain, which indications would only be found in a mine that had been worked. If this strange discovery proves to be an old mine, and rich, and all within a stone's throw of the city, it may lead to the discovery of others, and thus the "old pueblo" may become the leading mining center of the "Land of Sunshine and Silver."—Tucson Star.

The burglars who robbed the post office here on the morning of January 25, 1890, have been placed behind the bars. The gang composed of W. R. Davis, also called "Kid" Davis, and R. S. Morsey, are in jail at Denton, Tex., Ed McIntyre, in jail at Paola, Kansas, and Thomas Downey, in jail at Fort Worth, Texas. Mrs. Nellie Davis, wife of W. R. Davis, was also arrested by Postoffice Inspector Sullivan, of the St. Louis Division, at Sedalia, Mo. The field of the gang's operations extended from Missouri to New Mexico, and from Kansas to Texas.—Albuquerque Citizen.

With a railroad and telegraph office one fairly revels in modern civilization. Yet eighteen months ago we heard the click of the revolver instead of that of the instrument, and the howl of the coyote in place of the locomotive whistle. This is western enterprise, pluck and energy.—Eddy Argus.

The New York physicians testify that 75 per cent of the throat disease of that city among children are due to ill-ventilated school rooms. This is a pretty heavy school tax, and is worth figuring up in all large American cities.—Boston Globe.

The Prize Snake Story of the Year.

"Did you ever hear of the remarkable presence of mind displayed by McJunkin's tame rattlesnake?" asked the snake editor.

"No," replied the horse editor. "McJunkin was out hunting one day and he came across a rattlesnake on which a rock had fallen accidentally in such a way that the reptile could not get away. Being a humane sort of a chap, he lifted the rock and released the snake, which expressed its gratitude in a few joyful rattles and then wriggled away."

"Is that where the presence of mind came in?"

"No; I am coming to that. A year or so after McJunkin was hunting in the same locality and was startled by hearing the peculiar noise of the rattlesnake. Turning he found one of the reptiles following him, and recognized the one he had been kind to a year before. The snake seemed very glad to see him, and followed at his heels like a dog. McJunkin was struck by this remarkable case of gratitude in a creature supposed to be totally devoid of that quality, and he took the snake home with him. After extracting its fangs the snake was permitted the freedom of the house."

"One night McJunkin heard a noise in the room below, where his safe was standing. Going down to see what the trouble was, he found burglars at work, but they promptly gagged him. Mrs. McJunkin followed her husband down stairs, and rushed to the window to give the alarm. She had opened it about four inches, when she, too, was seized and gagged by the burglars."

"About this time the snake, which had been asleep under the fire, crawled out. It saw at a glance that the man who saved its life was in dire distress. Wriggling rapidly toward the open window, it climbed a chair, thrust its tail out into the street and made such a loud rattle that the police arrived before the burglars could get away, and both were captured."—Pittsburgh Chronicle.

The Mount Morgan gold mine, Australia, paid dividends of \$5,363,150 in 1889. This is the greatest gold mine in the world. It was bought a few years ago for \$3115 and is now valued at \$73,000,000—in fact \$90,000,000 have been refused for the mine and works. The machinery and plant cost nearly \$5,000,000. During the year ending November 30, 1889, 75,415 tons of raw ore returned 223,522 ounces of gold, equal to 4 ounces 6 penny weights 4 grains per ton for the total ore raised.—Mining and Scientific press.

The lion is eaten by some African races, but its flesh is held in small esteem. The Zulus find carrion so much to their liking, that, according to the late Bishop Colenso, they apply to food peopled by large colonies of larvae the expressive word, "uborni," signifying in their uncouth jargon "great happiness." David Livingstone, that keen and accurate observer, reminds us that the aboriginal Australians and Hotentots prefer the intestines of animals. "It is curious," he says "that this is the part which animals always begin with, and it is the first choice of our men."—Science.

Parties lately in from Maricopa report that the herd of 2,000 head of cattle being driven to California by Mr. Land are in fine condition even better than than on leaving Tucson two weeks ago yesterday. The stock, as will be seen, have been driven slowly, have been given two days of complete rest. There is no lack of water along the route, thanks to the late rains. Mr. Land intended following the railroad, as this will be shorter than via the ordinary route.—Citizen.

H. W. Brizzee, of Mesa City, lately sold a Durham grade cow that is a bright example of what alfalfa feeding is capable. The animal was five years old, had been reared by Mr. Brizzee and had never been fed on anything but alfalfa, being taken from a closely grazed pasture to the butcher. As live weight the cow tipped the scales at 1770 pounds; dressed, the four quarters weighed 1010 pounds. The meat was of superior quality. It is doubtful if this weight of dressed meat from a cow was ever equaled.—Phoenix Republican.

A petition is now being circulated and numerous signed, requesting the board of supervisors to issue bonds to the amount of \$250,000 for the building of a railroad from Calabasas to Tucson. The projectors of the road are Col. Sykes and Capt. Fitzgerald. It is stipulated that the road is to be in running operation before the bonds are payable.—Tucson Citizen.

The Arizona Lumber and Timber Co., mean business, judging from the number of logs they have collected on their new mill site, some five or six miles east of town. They will put in their machinery when the switch is built from the line of the A. & P. road out to their new location. This will make five mills the company owns within a radius of 12 miles of Flagstaff.—Flagstaff Democrat.

A stalwart young man at Leavenworth, Kan., recently accepted a wager that he could not stand a quart of water dropped into his open hand, drop by drop, from a height of three feet. Before 500 drops had fallen into his hand he almost cried with pain and said he had enough. After a little water had fallen each drop seemed to crush his hand, and a blister in the center was the result.—Boston Journal.

Says the Prospector: A bill for the removal of the capital from Phoenix to Tucson will be introduced in a few days. The Prospector has been favored with a perusal of it, and with the exception of the date for the removal to take place it indorses the bill most heartily. We would wish to see the change made at once and not two years hence, as the bill proposes.

Cattlemen in this section will be interested to know that papers have been filed at Santa Fe incorporating the Deming Cattle Pen company, with a capital of \$5000. The Headlight says that it is the purpose of the company to sink wells and to put up extensive cattle pens out on the ranges about Deming, to facilitate the holding of stock coming in there for shipment.—Prospector.

Ex-Sheriff Slaughter returned yesterday from San Bernardino ranch, where he has been for three weeks, gathering cattle on his range preparatory to making a shipment from Deming east. He states that there are Indians down that way, but no soldiers. The little band which killed Smith passed through the Guadalupe mountains on their way to Sonora.—Tombstone Prospector.

In New Mexico they have had a plan in past years of issuing warrants against the treasury in payment for the expenses of fighting the Apaches when an outbreak occurred. These warrants were drawn in favor of citizens who furnished horses, arms or men, and amount at the present time to \$600,000. The warrants will be paid when a certain surplus is in the treasury.—Ex.

During 1890 more than one hundred and twenty new companies connected with electrical engineering were registered in England, the total capitalization being upwards of \$65,000,000.—Electrical Review.

Based on official statements, Kuhlow's (Berlin) gives the following: "During 1890 there have been within the German Empire 5,908 business failures, as compared with 5,206 in 1889 5,149 in 1888, 4,804 in 1887, 4,753 in 1886, 4,632 in 1885 4,332 in 1884, 4,607 in 1883, 4,782, in 1882, 5,002 in 1881, and 5,358 in 1880. The year 1890 has therefore been, since the introduction of the joint regulation for failures in the German Empire, by far the most unfavorable one."

Philadelphia maintains her rank as the greatest manufacturing city of this country, producing \$178,148,000; New York, \$172,000,000; Chicago comes third with \$38,000,000; then Brooklyn with \$32,000,000; Pittsburgh, \$52,600,000; St. Louis, \$50,800,000; San Francisco, \$35,300,000. Besides, Philadelphia is a saving city and keeps what she makes. Her foreign imports last year were \$56,057,000 in value; in 1870 they were but one-fourth of this vast amount.—Rand-McNally Banker's Monthly.

The National bank circulation outstanding has now declined to a little over \$175,000,000. The amount outstanding on the 31st ult. was in exact figures \$175,490,232. This represented a decrease of \$1,665,307 for the month, and of \$79,003,340 for the twelve months ending January 31st. The portion of the circulation based on the deposit of United States bonds amounted to \$125,859,360, an increase of \$198,999 for the month, but a decrease of \$337,670 for the year.—Bradstreet's.

At the Baltimore Copper Works experiments have been carried on for many months to test a new method of copper refining by means of electricity. These tests have been so satisfactory that a \$500,000 company has been organized by the Messrs. Keyzers, of the Baltimore Copper Works, and Mr. Chas. F. Mayer, president of the Baltimore and Ohio Railroad, to build large works for electrically smelting copper.—Baltimore Manufacturer's Record.

The most expensive thermometer in this country is in use at the John Hopkins University. It is known as Professor Rowland's thermometer, and is valued at \$10,000. It is an absolutely perfect instrument, and the graduations on the glass are so fine that it is necessary to use a microscope to read them.

The metropolitan newspaper of to-day is one of the best illustrations of the progress of invention. It is a crystallization of the results of applied science. It embraces the latest triumphs in electric science, steam engineering, and mechanic arts, and it employs the best brain power of the time.—Inventive Age.

Phil Askins, the noted lion hunter, although living within 60 miles of Globe, has not ventured within its boundaries since it became a town until the present week. With in that time, 15 years, he has killed 145 monarchs of the forest and one leopard, the skin of which was sold to a gentleman of Cleveland, O., for \$35.—Globe Silver Belt.

E. F. Kellner has shipped twenty-one cars of beef steers to California. If the market is not up when he arrives at Bakersfield, he will hold them there on pasture. Mr. Kellner has now on pasture here about the same number, which he will ship in a short time.—Phoenix Republican.

The Cunard Steamship Company has contracted for two fast steamers of 12,000 tons each. Their speed is to be 22 knots an hour, which will enable them to make the trip between Queenstown and New York in five days and eight hours. They will cost \$2,000,000 apiece.